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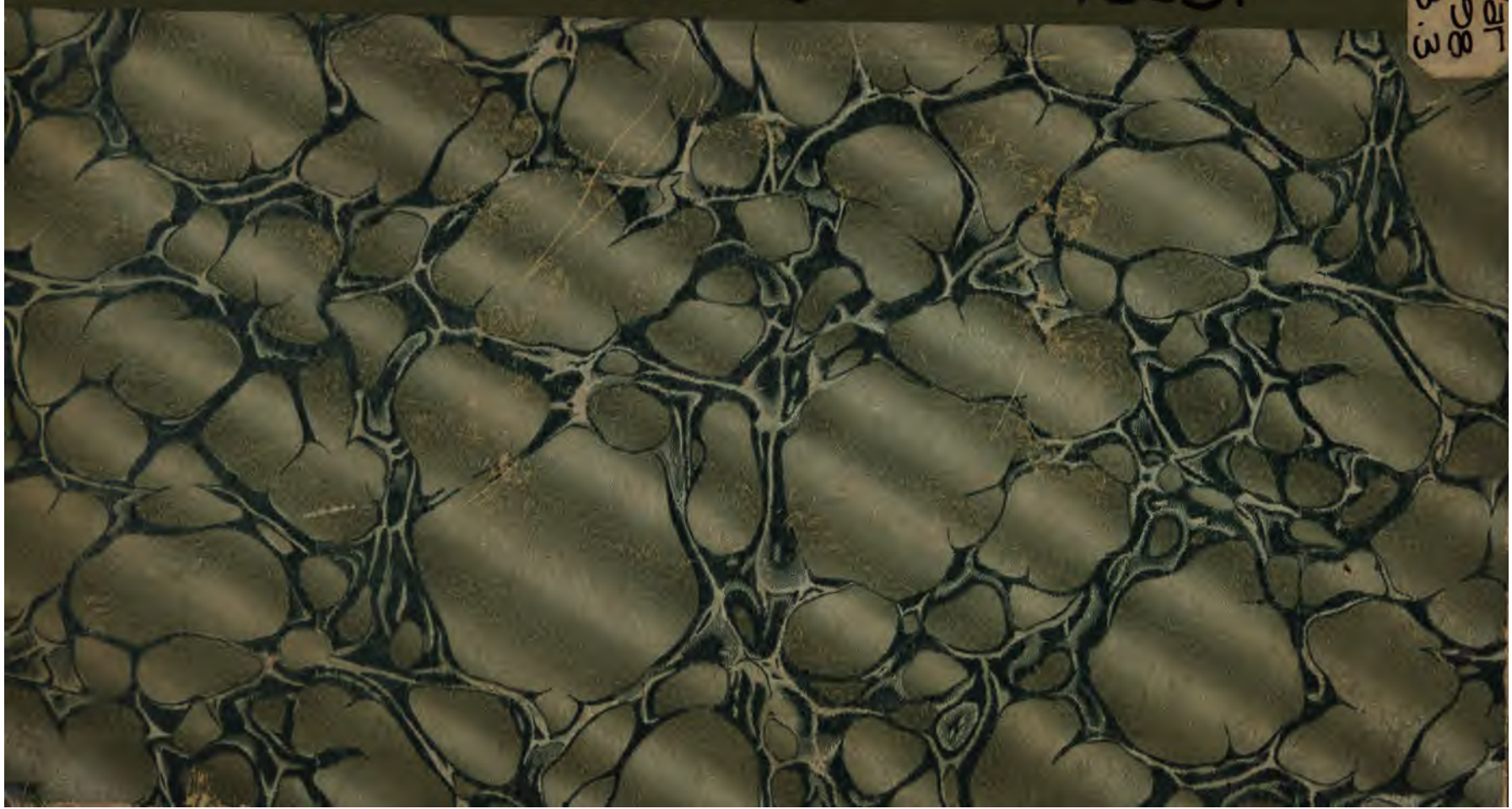

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THE BEQUEST OF
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MEMORIAL

AND

RESOLUTIONS.

TO THE PUBLIC.

A FEW WORDS IN ADVANCE.

In preparing my Pamphlets for the perusal of the public I have not been instigated or encouraged by any party, political or otherwise.

The Inventions described are my own.

The experiments were conducted entirely at my own expense.

My own reading and personal inquiry supplied the quotations and the facts.

The costly drawings and engravings, the paper and the printing, and the expensive models were procured solely at my own expense; so that whatever benefits my country may derive from my labors, the experiments and their published results, have, up to this time, cost it nothing.

The matter of my pamphlets was, necessarily, written hastily; for during its composition I was constantly engaged in extensive manufacturing of ordnance and in the preparation of ordnance stores. It will, then, be readily understood that I have had no leisure to dress up my language to a point of literary refinement—that, in my haste, I may not have chosen the least offensive terms, when writing of those whose conduct I may censure, or whose theories I may dispute. For this my apology must be, in the first place, haste, and in the second, that what I have written was impelled by a sense of right, by my earnest desire to serve my country, to do something for the War, to correct existing abuses, and not from motives of personal pique or ill-will toward any one.

NORMAN WIARD.

MEMORIAL

OF

NORMAN WIARD,

TO THE

Senate and House of Representatives,

IN CONGRESS ASSEMBLED.

TO BE ACCOMPANIED BY

EIGHT PAMPHLETS,

ENTITLED

I.—GREAT GUNS, THE CAUSE OF THEIR FAILURE, AND THE TRUE METHOD OF CONSTRUCTING THEM.

II.—FIELD ARTILLERY.

III.—MARINE ARTILLERY.

IV.—SMALL ARMS.

V.—SHIPS, RAMS, AND FORTS.

VI.—PROPOSALS.

VII.—EXPERIENCES OF A CONTRACTOR.

VIII.—REVIEW, IN DETAIL, OF THE ANNUAL REPORT OF THE CHIEF OF THE NAVY ORDNANCE BUREAU, 1862,

With remarks on the present organization of the Washington Navy Yard, and its uses in connection with the said Bureau.

New York:

HOLMAN, PRINTER, CORNER OF CENTRE AND WHITE STREETS.

1863.

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FROM
THE BEQUEST OF
EVERT JANSEN WENDELL
1918

PREFACE TO SECOND EDITION.

THE publication of my Memorial and Resolutions of inquiry, addressed to the Senate of the United States assembled at Washington, together with the accompanying pamphlets, has created so deep a feeling of interest and curiosity in all circles, that I feel compelled, in order to meet the urgent and repeated demand for copies, especially from members of the press and officers of the army and navy, to publish a second edition.

It may be urged by some that my Memorial, while it is replete with charges of a very grave character, against officials in high positions, that the proofs which should sustain such accusations are too few and insufficient.

I propose, therefore, in the Second Edition, to prove, by personal and other examples, all that neglect of duty, that disregard of the public interests, that pride of place, which ignores all outside intellect and enterprise and the rights of private citizens having business with the Government, and that incapacity which clings to worn-out theories, on the principle

MEMORIAL OF NORMAN WIARD.

To the Honorable the Senate of the United States assembled at Washington, February, 1863.

Having expended much time, money and effort, vainly, in the endeavor to secure from the War or Navy Departments, or either of the Bureaux thereof, official attention to, or examination of, certain discoveries made by me, in relation to the cause of the bursting of large guns* namely: *The unequal expansion*

* See Wiards' Pamphlet, "Great Guns," pages 19, 44, 66. It is often noticed as a curious phenomenon, when large guns burst, that notwithstanding the chase or forward part of the gun, several feet in length, may be thrown many feet, end over end, the shot passes through the chase the length of the bore without being diverted from, or affecting the direction of its aim. This fact corroborates the theory I have advanced.

In speaking of the effect on plates, 5½ inches thick backed by teak, of the 150 pdr. smooth-bore, Armstrong gun, at Shoeburyness; the Merchants' Magazine says of the 4th round: "Large pieces of the armor plate were driven through the target, crushing the wood backing to shreds, bursting a great opening through the skin plates, and completely smashing two iron frames.

"The discharge of this shot brought the destructive action of the 150 lbs. to a close, for this COLLOSSAL 12 TON GUN, about which there has been so much controversy, BURST IN FIRING THE FOURTH ROUND. The entire breech end, weighing about 17 cwt., was blown off, and carried about 50 yards behind. NO PERSON WAS INJURED. But this is not surprising, because previous to every discharge, the artillery men gave the dangerous monster a wide birth (this would not be so easily accomplished in a turret on board a ship,) the gun being fired by a long lanyard, pulled by a gunner, who was safely ensconced." The London Enquirer says: "this gun was broken by a 50 lb. charge after it had been fired with a 90 lb. charge, and this gun weighing 12 tons, ⅓ heavier for the same weight of shot than the Dahlgren of same calibre, and made in the most careful manner, of a material having three times the tensile strength, is burst at the fourth round."

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of the metal of guns by heat, resulting from the combustion of gunpowder in the chamber of the guns, thus involving the necessity for constructing guns so as to secure compensation for this cause, by using metals of different expansibility, as set forth in my pamphlet entitled "Great Guns;" and to certain mechanical combinations, inventions and improvements, essential to the fabrication of trustworthy guns, rifled and smooth-bore of various calibres, to project shot of greater weight at higher velocities than have heretofore been brought into service or deemed possible; improvements in projectiles; to an improved system of Field Artillery; to a system of Marine Artillery, in which guns mounted on light draft steamboats, can be made more available for service on board the boats, in launches, and on shore and to improvements in iron-clad ships and fortification.

I have under these circumstances, finally found it necessary to address myself to your Honorable Body, as every loyal American citizen may do, and to ask that a suitable commission be appointed to examine into, and report upon, discoveries and inventions, which are fully set forth and detailed in the pamphlets which accompany this Memorial.

Our neighbors, the Canadians, have or had a "Board of Public Works," who, when a public building, canal, road, or fort is required, advertise in the papers for "*plans, specifications, and estimates,*" offering five grades of prices as prizes for them. The first being a magnificent price for the labor and genius of producing. The second a liberal price; the third a fair price; the fourth a low price; and the fifth such a price as is supposed to just cover the expenditure for stationery, etc., of the person offering it. These prizes are awarded by the Board, who may call in the assistance of experts to assist them. This Board of Works reserves the right to unite the good qualities of all the matter presented, and to award the superintendence of the work to any of the applicants, or not, as it may decide. A careful revision of these proposed plans and specifications

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It is well known that in all experimental trials of our large guns, the gunners stand at a respectful distance, from fifty to two hundred feet off. Even the inventor and founder will not trust himself within the possible reach of danger, so little confidence has he in the strength and durability of his work.

takes place, and all the plans offered are carefully recorded. Then other advertisements are inserted for tenders for the construction according to the plans, specifications, and estimates so resolved upon. By this means the best talent of the country, in the various departments, is secured to the Government.

With *certain exceptions*, my plans have been examined by hundreds of officers of the Army and Navy, by members of both houses of Congress, and by numbers of mechanics and scientific experts, and have received the highest unofficial commendation and indorsement. The exceptions alluded to above, comprised those points of my inventions, which I myself, and a few discreet friends of the Government to whom I showed them, judged from patriotic motives, ought to be kept secret. *These I have been willing and most anxious to disclose to the properly accredited agents of the Government, and if need be, to give to my country the entire benefit of all my improvements and discoveries, with any personal supervision necessary to their prompt and perfect development.* Nevertheless, I have found it utterly impossible to command the *slightest attention, recognition, encouragement, justice, or even common civility, at the hands of the Chief of the Bureau of Ordnance of the War Department, Brig. Gen. JAMES W. RIPLEY,* who has to me at all times acted the part*

* On one occasion I received notice that a requisition for additional stores for the Marine Artillery in service in North Carolina, had been handed to Gen. Ripley, which were needed immediately and must of necessity, be supplied by me. I was in Washington at the time, and I had the stores there, ready for prompt delivery. These stores could not be procured from any person other than myself, and I called upon Gen. Ripley to say I was informed he had a requisition for me, and that if it were handed me there I could supply it from the stores I had in Washington. He very ill-naturedly told me that the requisition had been mailed to me at New York. I asked him for a copy of it, which he refused. As I was leaving the office, I asked a clerk when the requsition was mailed, and he exhibited it to me in his hand, *not mailed.* I returned to Gen. Ripley and endeavored to explain this to him, but in effect he refused to hear me, and asserted that if it had not already gone it would be sent to New York. I immediately applied to the Secretary of War, and he directed that the requisition should be given to me. I received the requsition and supplied the stores on the same afternoon. Had I not thus promptly procured this order from the Secretary of War, Gen. Ripley's rude and unbusiness-like conduct would have caused a delay of several days in the furnishing of stores which were needed immediately, and would have added the unnecessary cost of transportation to and from New York.

of a morose, illiberal, insolent, arbitrary, and petty oppressor, and in the case of my improvements in ordnance, notwithstanding I had expended more than twenty thousand dollars in making experiments, and in preparing models, drawings, and specifications, and exhibiting them publicly for five months at my parlors at Willard's Hotel, a place of almost daily resort for him during the whole of that period, he could never be induced even to look at them, though often invited and urged by myself and others to do so, but used his influence so far as the expression of his opinion could do it, to discourage and crush me out; and this too, while I was receiving visits from the President, members of the Cabinet, foreign ministers, and commanders of armies in the field, all of whom gave me the most cordial recognition and attention. Neither could I induce the Chief of the Bureau of Construction, MR. LENTHALL, to look at or examine my costly, novel, and much commended models and plans for iron-clad ships, nor could the late, nor the present Chief of the Ordnance Bureau of the Navy Department, *Admiral* DAHLGREN, be induced to even look at my plans and models, with the single exception of a brief call, made after repeated invitations, delays, and one very decided and uncourteous refusal, when, after inviting me to bring some of my illustrations to his office in the Washington Navy Yard, which I did, he refused to look at them, or to hear my explanation upon *any terms*, saying to me petulantly and insolently, that there was "*no use in my trying to explain, as all I might say on the subject would go into one ear and out at the other.*"

Soon after this refusal, the Secretary of the Navy called on me, and in the course of my explanation of my plans to him, he asked me "if Dahlgren had seen my plans and heard my explanations," a question which had often been asked of me before by the President and others. I informed the Secretary of the unofficer-like conduct of his present Chief of the Navy Ordnance Bureau. Previous to the close of our conversation, the Secretary stated that my "explanations of my plans had made a very favorable impression on his mind, and that he would soon send a proper Ordnance Officer to examine and report upon them," remarking incidentally in conclusion, "that it

would be best to avoid a collision with Dahlgren, if possible, as he was very influential and had a great reputation."

Soon after this promise was made, I was surprised one evening by a visit, apparently voluntary, friendly, and unofficial, from Commander Dahlgren, who informed me that he wished to examine my plans and hear my explanations of them. To this request I assented, making however, one condition, namely, that he should hear me through in a more patient spirit than he exhibited when I called on him at his own office and at his request, and that he should frankly express to me his assent to, or dissent from, my positions as I explained them, or, in any event, *before giving them expression to any other person.*

I supposed he accepted this condition, as he, with apparent cordiality, remarked "Let us have the explanations." During our interview of an hour or more, *no word of assent or dissent was uttered by Commander Dahlgren, except at the points where my arguments were contrary to the theories of Captain Rodman, of the Army Ordnance Department, when he perfectly assented to, and even aided in strengthening my positions.* From the close of that interview to the present time, I have never been able to obtain directly a single word indicating his opinion for or against my plans in relation to ordnance.* Within a week after our interview, however, I was informed that Admiral Dahlgren, in reply to a question from a distinguished Major General commanding in the field, who had just examined my

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* Yet, since that interview, Admiral Dahlgren, as chief of the Navy Ordnance Bureau, has made a very elaborate, detailed, and specious report, on ordnance and cognate matters, to the Secretary of the Navy, in which occurs, on the 13th page, the following indirect thrust at my theory of the cause of the failure of large guns, namely, *unequal expansion by heat, resulting from the combustion of gunpowder in the chamber of the gun.* It is in these words: "*On another occasion an 11-inch gun was fired five hundred times, of which one hundred and seventy fires per day were made in two successive days, which so heated the gun that it was found to be warm eighteen hours afterwards. No sign of weakness was detected.*" This paragraph stands alone, without connection or reference, and is remarkable for the palpable design of its author to mislead the reader, as there is no mention made of the amount of powder used, or the weight of shot, nor the elevation of the gun, nor the rate in time of the firing. The service charge fixed by Captain Dahlgren for his 11-inch gun at this time was fifteen pounds of powder—less than half a proper charge.

plans and was desirous of learning his opinion, said: "*Wiard's plans are contrary to science and the results of all experience.*"

At the close of the last Session of Congress, I called with Senator J. R. Doolittle, of Wisconsin, upon the Secretary of the Navy, and urged my claims for attention and action on his part. The Secretary, after some hesitation, at the direct request of Senator Doolittle, sent for the then, and at present Assistant Chief of the Ordnance Bureau, and asked his opinion of my plans, for a "turret and spherical guns." That officer promptly replied that *he had examined my plans and had heard my explanations repeatedly, and fully understood and approved of them; stating further that if he could have his own way, he would direct Mr. Wiard to build a turret and a pair of his guns at once.* Upon this statement the Secretary expressed himself satisfied, and promised to appoint a Commission, consisting of Admiral Gregory, Lieutenant Wise, and Chief Engineer Stimers, as suggested by me, among others, as suitable officers to act. I left the Secretary with the understanding that when I was ready, I was to notify him in writing, and the Commission would be immediately directed to meet me in New York City.

A short time after, I notified the Secretary that I was ready, but neither that notification, nor subsequent application, resulted in procuring the Commission promised. Many months have passed away and I am, apparently, as far from getting the promised examination as before.

I recently submitted my very elaborate and detailed specification and patent drawings, intended for England and France, to the War and Navy Departments, asking for a joint Commission to be appointed to examine, and decide how far the interests of the government would be subserved, by keeping secret some of my inventions, and to examine and report on all of them, to the respective Navy and War Ordnance Bureaux.

I have now made three applications, the third being as above stated, for a *joint* Commission, and the promise has been as often renewed and still no Commission is appointed; and the Secretary, when pressed, now refers the matter to a more convenient season, or to the Chief of his Ordnance Bureau, who declares that he *has no time to attend to such "outside mat-*

ters," yet, " that he would not put a straw in Mr. Wiard's way, as he will have trouble enough before he gets his plans perfected and adopted."

The War Department had the matter before it for some weeks, but did not even read my very brief written request. The Navy Department, through the action of Captain Henry A. Wise, Assistant Chief of Ordnance, and Captain Fox, Assistant Secretary of the Navy, promptly agreed to appoint its part of the joint Commission, but several weeks have already elapsed, and I have not yet received a notification of the formation of this Commission.

Another reason why I, at this time, urge my Memorial upon the attention of your Honorable Body, is, that it has been noticed with alarm by many of the earnest and patriotic men who watch with anxiety the course of events during this unholy war, that proposals for heavy ordnance are advertised for in the newspapers, but coupled with such oppressive conditions, that only those entirely ignorant of the difficulties which are well known to the Ordnance Department and to ordnance founders, will venture to make a proposal or enter into a contract, (and such men *are not likely to succeed in producing good guns*), the contractor, having to submit to a test, on the result of which the payment for even a single gun and the continuance of his contract is to depend ; this too, although many thousand dollars must be expended in preparation. And this test, as in the case of the 13-inch guns now required, is one to which no 13-inch gun has ever been submitted. And when such parties do undertake such work, a sufficient number of failures are certain to be recorded, that Ordnance Departments can present to your Honorable Body, fallacious arguments why you should make large appropriations for extending the facilities of the old, and building new government founderies, in which old errors are to be perpetuated, and new places found for officers among men of their own class. And a strong point of argument urged upon your Honorable Body in favor of such appropriations, is the failure to secure the fabrication of the required amount or quality of guns or arms from private contractors by this means. And you are urged, almost at the last day of the

session, to make these appropriations for reasons involving an outrageous shifting of the odium of the want of knowledge and skill, from the persons on whom it should properly rest, in order to unjustly discredit the skill and enterprise of the mechanics of the country, whom it has always been believed were equal to any demands in this direction that might be made upon them, and whose *loyalty* is undoubted.

No better argument can be used in opposition to the proposed appropriation of millions of dollars, for the purpose of establishing great government founderies, for the production of cannon and confirming officers, in life-long sinecure positions, than the acknowledged fact that all governments which have trusted to the skill and ingenuity of a privileged class, or to one person to decide upon or to furnish designs and improvements in ordnance, have signally failed, as in the case of England. Sir William Armstrong having, according to computations, cost that government over forty millions of pounds sterling for experiments upon his inventions. Yet his large guns have always failed, while Whitworth, Blakely, and others, private citizens, without government patronage, have succeeded in producing better guns, as might have been expected, since no man so earnestly strives for success as the one who pays his own bills. I might call the attention of your Honorable Body to an illustration nearer home.*

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* A letter addressed to the Secretary of the Navy, by me and which appeared in the *N. Y. Tribune*, will more fully explain my views upon this subject.

GOVERNMENT FOUNDERIES.

To the Hon. GIDEON WELLES, *Secretary of the Navy.*

SIR: In reference to your proposition to organize Government founderies for the production of large guns, and to your proposition to Congress to make an appropriation of $30,000,000 for rolling mills and the fabrication of heavy rolled plates for iron-clad ships, etc., I wish to say that your statement and letter to Congress to the effect that "there are but two or three manufactories capable of undertaking such work, and these of limited capacity," creates no little surprise among that class of persons who have been in the habit of thinking that the genius and enterpise of our people is unparalleled, and who can not be brought to believe, by so slight an allusion as you have made to the subject, that there are not hundreds of contractors possessing sufficient skill and commanding sufficient capital to produce, with economy, any required article of

It is a national disgrace, that a people who justly pride themselves on their mechanical ingenuity and skill, should intrust

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manufacture, through private enterprise, that can be produced by Government employees with an appropriation of four times $30,000,000; and these men will continue to be of the same opinion, even after they have had presented to them all the arguments that were presented to you as an inducement to make an application to Congress so contrary to the true interests of our Government and the spirit of our institutions, and so degrading to our character for skill and enterprise.

With regard to the fabrication of large guns, you undoubtedly know that with all the routine efforts of our ordinance officers and the millions expended in experiments, we have not yet secured a single trustworthy 80-pdr. rifled cannon, and have utterly failed in our 7½ inch rifles (150 pounds), that we have no regular ordnance officer to-day willing to say that he will fabricate a 50-pdr. rifle and offer it for service with the assertion that he knows it to be a good gun, without having put it to trial. If we have not yet learned how to make a trustworthy gun by the practice of the exclusive system during so many years, and at such an expenditure of time, money, and materials, ought we not to have learned to open the business to public competition, and to bring to the service of the Government the constructive genius of 20,000,000 of people instead of the traditions handed down from one to another of a class of men all educated in the same exclusive school, and only numbering a few hundred individuals in the course of a hundred years.

The late proposition for tenders for large guns, as seen in the advertisements in the newspapers, emanating from yourself and the Secretary of War, would seem at first sight to be a frank permission to outsiders to enter the arena, yet this field of competition may be compared to a prize-ring to which the Ordnance Department challenges all comers, and when the people, eager for a fight, press against the ropes, the Secretary of the Navy acts as umpire, and suggests that three or four of them only be admitted to fight it out, and whip each other in the presence of admiring ordnance officers.

If the Government wants *large guns, and our ordnance officers know how to make them, why not set them to work upon them, and make room for the work, in the present ordnance founderies, by giving the small guns to outside contractors, furnishing these contractors frankly with all the information that has been obtained at the expense of the people upon the subject?* Pay Capt. Dahlgren a salary predicated upon his success with large guns. I would not ask you to be as severe with him as with any private contractor, for if the ninth or tenth gun of a lot of fifteen, made by a private contractor, made even at a cost of $100,000, should burst, you condemn the whole lot, and the ordnance officers congratulate themselves upon having disposed of one more of those *presumptuous mudsills* who has had the audacity to meddle with what is held to belong exclusively to *government-bred* aristocrats, born to position in the Navy Department.

the invention and fabrication of so important an auxiliary to their unity, power, and national greatness as Ordnance, wholly

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If even our experienced ordnance officers have doubts about success in making large guns, why advertise for tenders from contractors for furnishing large guns, and in such a manner as to throw all the risk upon the contractor? Was not the real object to get rid of the importunity of those unsophisticated inventors and would-be-contractors who were pressing their claims for contracts upon the Government, but who would be either deterred by the stringent terms, or annihilated by expending their time and means upon an effort to produce an article, in which they have but one chance in a thousand of succeeding, and still less able to serve the Government by giving it a trustworthy large gun. It is a gross outrage upon the people who pay the expenses, that after all the money expended, even Capt. Dahlgren can not give you the plans and specifications for the manufacture of a large gun that will not have to be destroyed to prove its barely tolerable quality. Yet Capt. Dahlgren once stated to me that he "had burst more guns than any other man in the world;" now had even a small per centage of the money thus expended, come out of his own pocket, either he would have been ruined or his guns improved. It leaves the impression on my mind that in the advertisement for tenders for large guns, in your letter to Congress relating to appropriations for manufactories for heavy rolled plates, and in the advertisement for tenders for fifteen gunboats, you have put the contractors in a false position. You will not, I know, pay a price for large guns that covers the risk, and I do not believe that any man familiar with the subject believes that you would get the guns, even if you did, while you do not know that thick rolled plates are to be the best armor for iron-clad ships, or that there will ever be more than one ship made—the experimental one—and you would not give the contractor a contingent agreement to pay for machinery that would be useless for any other purpose in case you should not require plates for more than one. And you can not expect to get fifteen gunboats to draw six feet water, and attain a speed of sixteen miles an hour. If the contractors work up to their own plans, some of them will fail and all of them are liable to do so. Will you pay anything for the risk in addition to a fair price for the actual cost? I think not to the contractor, but you will ask for an appropriation to build Government shops, and thus insure that the risk is taken by the Government. But you do not thus insure that you get the most trustworthy guns, the most enduring plates, or the most efficient gunboats. As a rule, it may be depended upon that any investment of this kind that would not be thought desirable by any of our careful business men is not desirable for the Government. Great Government founderies also do this great wrong, that they demoralize our mechanics and paralyze our manufactures. Organize a great ordnance foundery at Chicago, for instance, where now it is the hope of the citizens at some time to attain the dignity of being a manufacturing City. For months after each election, the mechanics hang about the

to a class of persons who have been educated as theorists. It is as difficult to teach mechanical ingenuity in schools, as it would be to communicate the inspiration of a poet in such places. We have no schools for the specific purpose of making

corner groceries, drinking bad whisky with loud politicians "laying pipe" to get appointed to the Government shops, where wages are high, hours of labor short, and duties not severe. During this time they can not be induced to take employment at any other manufactory. They spend the money earned by previous economy, while the certainty that but few can be appointed, only spurs them on to greater exertion, and makes them more heartily despise their former employment. When finally employed, their earnings are spent in the same groceries, button-holing friends and preparing for the next election, as the conditions upon which they get the appointment, and the continuance of this habit makes them despise even their employment at the Government shop, and they take up their abode at the before-mentioned bar-rooms, where they sink to the condition of a self-imposed candidate for Congress or some other official position, from which they are seldom or never reclaimed. How universally this is the rule can only be believed by those who have seen it, and it can be seen wherever there is an institution of the kind mentioned. The true policy of the Government would be to have an Ordnance Bureau and Bureau of Construction, not managed by one old and superannuated naval commander, but by a number of men eminent for their intelligence, skill, and integrity, who should advertise for plans and specifications, to be paid for according to their merit, and then let the same bureau advertise for tenders for the furnishing of every article required, made according to the plans and specifications so procured. I would have a board for each of these bureaux, nominated by the President and confirmed by the Senate, each of the bureaux being composed of five members, with one expert as a clerk, to be paid only when on actual duty. The result in guns and ships of war under such a system would shortly excel anything in the world. The Government would obtain whatever it required at the lowest market prices, as would any intelligent business man. We should thus conform to the spirit of our Republican institutions, and could always know the cost of whatever we produced, and we should support and worship no aristocracy but that of talent and genius to which we owe, at least, as much deference as we have been in the habit of paying in *talk*. It has been an-often-repeated remark that this war will develop great improvement in the engines and art of war, but at the same time, fear is expressed that European nations will reap more benefit from it than we shall ourselves, for engineers here, failing to receive attention at home, will be encouraged or compelled to exhibit their inventions and improvements in France, England, and other countries, and their adoption would leave our country far behind. This danger should not be forgotten by our Government, for we may not even have completed our present ungracious

poets, why then should we expect in such places to create or incite the equally *divine* inspiration of mechanical genius.

We can, and we should adopt a system which would produce guns that would as completely answer the purpose for which they are intended, as our most common agricultural implements answer the end for which they are designed.

What farmer would long continue to purchase ploughs of a manufacturer, whose productions were liable to fly in pieces at any extra strain, while turning a furrow, killing the ploughman, destroying the team, and tearing down buildings.

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task, before we shall be called upon to begin another war of greater magnitude, only to be successfully encountered by a bold front and the most formidable preparations.

NEW YORK, June 25, 1862. A LOYAL MECHANIC.

The *Scientific American*, December 20, 1862, fully indorses my views in an article headed NATIONAL FOUNDERIES:

"To establish national work-shops, is to offer a premium for all sorts of incapables who may have political influence. * * * * Not only can these facts be established, but it is also true, that at a period when the Government required the services of engineers of experience to fill ordinary appointments on the transport, despatch, and iron-clad vessels and batteries, this same political schibboleth presented itself, and became a grevious stumbling block in the way of men who really desired to serve their country. * * * What ante-diluvian systems, and what crab-like progression would be inaugurated in spite of the protests of the mechanical world outside of these fostering government yards. * * * It is not chemerical to assert that favoritism would be the rule. * * * It is hinted that the private establishments can not turn out sufficient work to answer the demands, and also that they can not make as large a class of forgings or castings as might be desirable. These are singular assertion in view of the facts. * * * If there is any especial need for more massive products or better materials than are now furnished, we are much in error. * * * And there is another point which would act materially against the succesful operation of government shops. That is, the contract system properly insisted upon, to guard against fraud or delay. How can there be any guarantee to the public equal to that afforded by the work-shops in the various States, now in full blast night and day. Heavy forfeits are insisted upon from the contractors, both as a spur to them, and as a remuneration to the people in case of non-compliance.

How can a government exact forfeit from itself?

An example of the incompetency of the government to carry on such great undertakings is well attested in the miserable war vessels which it has hitherto built.

In conclusion, I respectfully ask that your Honorable Body will take such action as may be necessary, by appointing either a special Committee, or a competent Commission, composed of ordnance officers and scientific experts from civil life, to secure a careful and proper examination of, and report upon, my inventions and discoveries, which I claim deserve attention, as they are now a vital subject of inquiry, and should receive examination from such Commission, together with such improvements as may be offered by others, which in the opinion of the Commission are deserving of attention, and which, if developed, would redound to the dignity and power of the nation.

I believe that no man, however autocratic his official or social position; *even though he should be near to the ear of those in high places, and be supported by interested and influential friends and a great name,* should be permitted to hold himself above the right of inquiry on the part of the people into the administration of his public duties, more especially when those duties confer almost unlimited and irresponsible power of expending the public moneys in ways that may be subversive of the public interests; and firm in the belief that there are great wrongs to be righted and stern justice to be done; and as a justification of the course which I conscientiously feel compelled to pursue on behalf of myself and others, who have suffered from the neglect of, or dereliction in the performance of those duties, and to afford an opportunity for defense to those I may have inculpated; I earnestly ask that the following resolutions of inquiry be adopted by your honorable body, in behalf of the interests of all concerned; and in support of my petition, I state the fact that a similar resolution of inquiry addressed to the Secretary of the Navy, was offered by the Hon. Mr. Foulke, of Illinois, in the House of Representatives, and adopted during the last session of Congress, but its intent and meaning were practically evaded by the Ordnance Bureau, and the desired information was not then, nor has it since been furnished by the Secretary of the Navy.

NORMAN WIARD.

136 East 33d Street, New York.

RESOLUTIONS.

Resolved, That the Secretary of the Navy be, and he is hereby requested to report to and inform the Senate, what rifled cannon of cast-iron, wrought-iron, steel or semi-steel have been projected, designed, or made under the auspices of his department, and by whom ;* also what number, size, weight and cost of cast-iron, wrought-iron, steel or semi-steel blocks have been contracted for or ordered, and how many of the same have been delivered, and by whom and where ;† also, how many of each size have been finished or partly finished, and by whom and where.

Also, how many from any cause or causes have burst or been rendered unserviceable, with the name of the designer or designers in each case,‡ and what expense to the public Treasury has been, or is likely to be incurred in purchasing, transporting, fabricating and experimenting on these blocks.

Also, how many, if any, of each of the various sizes of the Navy "Dahlgren" smooth-bore guns, and of what materials constructed, have been burst or rendered unserviceable at any time during experiments upon them, or while in service, and at what place, or places, and by whom designed and fabricated.§

Also, what expense to the public Treasury has been incurred for any and all such experimental burst or unserviceable "Dahlgren" guns, and what amount for gunpowder and projectiles used in such experimental efforts, and for labor, transportation, and preparation for the proper conducting of the same.

Also, what discoveries, if any, have been made in regard to the cause of bursting, or failure of guns of large calibre, rifle or smooth-bore.‖

Or what improvements, if any, have been made or proposed in materials or the methods of fabricating large guns, rifle or smooth-bore, or to ensure their greater endurance and immunity from bursting, by any naval ordnance officer or officers.¶

And what patents for the same, if any, have been issued, and to whom; and in whose interest and at whose expense.**

Also, what discoveries, inventions, or improvements, patented or otherwise,

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* See Wiard's Pamphlet "Great Guns," pp. 10.
† " " " " " 10, 11, 12.
‡ " " " " " 10, 11, 12.
§ " " " " " 11, 12, 13.
‖ " " " " " 18, foot note.
¶ " " " " " 19 to 44.
** " " " " " 8, 9, 10.

if any, designed to secure the above stated specific results have been submitted or offered to his department, or the Ordnance Bureau thereof, by unofficial persons,* and if any, what their nature, and by whom.

Also, what action, if any, has been taken by himself or his Chief of Ordnance, to properly examine into their merits and test their practical value, or to secure the exclusive or specific use of any of them for the service of this government.

HISTORY OF MY CONTRACTS WITH THE NAVY DEPARTMENT.

On the last day of July, 1861, I made a proposal to the Navy Ordnance Bureau, to furnish a large number of forged semi-steel small guns. On the next day I received the following answer from the Department.

BUREAU OF ORDNANCE AND HYDROGRAPHY,
Navy Department, Washington City, *August* 1, 1861.

Sir,—In answer to your proposals of yesterday's date, I have to inform you, that, the Bureau being desirous of procuring rifle cannon for the use of the Navy, at the shortest possible notice, will purchase guns of your fabrication of semi-steel; *Provided:*

1. That the guns made shall conform strictly to the directions and drawings herewith presented.

2. If you will offer five guns made as above stipulated, the Bureau will receive them subject to proper inspection, and if accepted, pay you at the rate of eighty-five cents (85c.) per pound.

3. It is to be distinctly understood, that, the Bureau is to be the judge of your compliance with the conditions of the agreement, and binds itself to the purchase of no more than may be ordered from time to time.

You will please notify the Bureau if you accept the terms herein specified.

Very respectfully,
ANDW A. HARWOOD,
Chief of Bureau, Ord. and Hyd.

To Mr. NORMAN WIARD,
Washington, D. C.

I reluctantly accepted these terms, and no complaint has ever been made that I failed, in any particular, to comply with the same to the minutest particulars of workmanship. The guns were made after designs by Capt. Dahlgren, and the fault was not mine, if they were designed upon erroneous prin-

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* See Wiard's Pamphlet "Great Guns," pp. 66 to 98.
Also see "Proposals" Pamphlet.

ciples, as I now know they were, and that too from confessed ignorance on the part of the designer, as to the cause of failure.

A week after, on the 7th of August, 1861, I received the following proposition from the Navy Department:

BUREAU OF ORDNANCE AND HYDROGRAPHY,
Navy Department, Washington City, *August* 7, 1861.

Sir,—The Bureau wishes to contract with you to make some semi-steel howitzers, 12-pdr., to be made after a model gun which will be forwarded to you by express.

Will you please notify the Bureau whether you will undertake it.

The guns to be made, subject to such inspection and conditions as are provided for in your other agreement.

Very respectfully, your ob't. serv't,
AND'W A. HARWOOD,
Chief of Bureau.

To NORMAN WIARD, ESQ.,
136 East 33d St., New York.

To this I forwarded the following reply:

WASHINGTON, *August* 9, 1861.

Capt. Andrew A. Harwood, Chief Bureau Ord. and Hyd.. Navy Dept:

Sir,—My visit to New York has resulted in my being able to offer you Steel Rifled Cannon at a price, that is much lower than the prices heretofore proposed on my part, and this reduction has been resolved upon from more favorable arrangements made with parties employed in the business, and from the confidence I have that the exigencies of the service will require a sufficient number of guns, small as well as large, to enable me to keep the foundries exclusively and fully occupied.

For Guns with	23	inches largest diameter,				90	cents per lb.
"	"	"	20 to 22	"	"	"	80	"
"	"	"	16 to 20	"	"	"	65	"
"	"	"	9 to 16	"	"	"	55	"

These prices are for all guns for which I receive orders hereafter; but not to affect the price of the first five guns, for which I now have your order; however, after the completion of the first five, the price will be reduced from eighty-five cents per pound to eighty cents per pound; 12-pdr. howitzers of less diameter than sixteen inches, are now offered you for fifty-five cents per pound.

I wish to have permission to offer a part of the first lot of small guns you may order made of cast-steel (solid ingots). I have made a few of these guns, and I think they have superior qualities. I can furnish them at the same price.

Yours truly,
NORMAN WIARD.

I also wrote, on the same day, asking for information about certain parts of the guns I had in hand, and urged the Bureau to give me orders for a larger proportion of small guns, as promised. On the 12th of August I received the following letter from the Navy Department:

BUREAU OF ORDNANCE AND HYDROGRAPHY,
Navy Department, Washington City, *August* 12, 1861.

Sir,—I have received your letter of the 9th inst., requesting instructions in reference to putting on the trunnions, sight and lock pieces on the steel guns you have engaged to make.

In reply, the Bureau authorizes you to use the breeching strap plan, contrived by Commander Dahlgren, and wishes you to understand that the welding or forging on the trunnions or other projections is not approved.

The lock lugs and sight masses may be screwed on.

While, as I explained to you, it would be impossible for the Bureau to state the exact number of rifle cannon and howitzers required, I take this opportunity to repeat to you that a large number will be wanted, and, as they are wanted directly, the establishment which can make them quickest and of good quality will necessarily have the most do. The order will be renewed as soon as the Bureau hears from you of the completion of each batch of five of the large guns; *and it will be the same case with regard to the howitzers*, provided you can carry on the work at both, at the same time, without retarding the delivery of the larger guns, which will be most wanted.

Very respectfully, your obedient servant,

To NORMAN WIARD, ESQ.,
136 East 33d St., New York.

AND'W A. HARWOOD,
Chief of Bureau.

On the 28th of August, 1861, I received the following letter, which will be found an important one in the history of this transaction:

BUREAU OF ORDNANCE AND HYDROGRAPHY,
Navy Department, Washington City, *August* 28, 1860.

Sir,—In *assenting to the making of five more steel guns by your establishment*, it was understood between us that the guns made under this new order are to be paid for according to the reduced rates proposed by you, namely, 80 cents per lb.

I must also remark that the reception of these guns depends necessarily upon the proof, and therefore any expedition which may seem desirable to the manufacturers is entirely at their own risk.

Very respectfully,

MR. NORMAN WIARD,
136 East 33d St., New York.

AND'W A. HARWOOD,
Chief of Bureau.

The following letter was received by me in answer to a pro-

[illegible]

[illegible]

[illegible]

ready for firing, and are still in the Foundery, the inspection and test uncompleted, ready for instant delivery. Two more were submitted for inspection and test of firing. One of them burst on the tenth round, it having been fired very rapidly on a cold gusty day, but was found to be perfectly homogeneous and solid. The tensile strength of the metal of all these guns was four times that of any cast-iron gun. The other, which from the great anxiety of the Bureau to have the guns before new machinery for boring and turning could be constructed, was finished at a work-shop in Brooklyn, and the workmen engaged on it committed a fraud, by inserting a false chamber, to supply a defect caused by boring the block about two inches too deep. This gun was fired very rapidly on a cold day, and burst at the ninth round, disclosing the fraud above-mentioned, with which I had nothing to do, as the Navy Department has undoubted proofs from its Ordnance Inspector, Hitchcock. The following extract from Com. R. B. Hitchcock's letter to the Navy Department, dated, December 13, 1861, shows that he entirely exonerates me from any complicity in the transaction:

"From all that I can ascertain, this gun was bored at one establishment, and then sent to another to be turned; by mistake, too much was turned off from the breech; this false piece* was then inserted, to bring the bore forward into its proper position.

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* This plug was taken out and sent to the Ordnance Bureau by Inspector Hitchcock; from thence Captain Dahlgren took it to his office at the Navy Yard, where he kept it for exhibition to members of Congress and others likely to be influential in passing a vast appropriation for Government Foundries. On one occasion, as I am reliably informed, the President and Assistant Secretary Watson being present, this unfortunate and inevitable "plug" was brought out by Admiral Dahlgren, and the circumstances in relation to it fully set forth to these distinguished personages with such eloquence, that the President was induced to remark that, "the man who could be guilty of such an outrageous act, likely to imperil the lives of patriotic sailors, ought to be hung and quartered;" adding, "who was the man who did this thing?" To which Admiral Dahlgren answered in his blandest manner, "Mr. Wiard of New York," making no mention of the facts stated by Captain Hitchcock, completely exculpating me, which he must have known, as the first letter from

"I have no cause to think that Mr. Wiard had any knowledge of this transaction."

Again, in a letter to the Navy Department, May 17, 1862, Com. Hitchcock writes:

"*I believe Mr. Wiard to have acted in good faith in all his transactions about these guns.*"

Notwithstanding these letters exonerating me, the failure of these guns was made the *excuse for annulling my contract for* 50-*pdrs., and also my contract for Howitzers.* I had made twelve of these Howitzers for Gen. Burnside, and five for the Navy Department, from a pattern gun sent by the order of the Bureau from the Brooklyn Navy Yard. The five Navy Howitzers passed a rigid inspection, were fired *ten rounds, the contract condition*, and sent to the Navy Department, where they remained for a year unpaid for.*

The twelve Howitzers furnished to Gen. Burnside were for Col. Howard's regiment of Marine Artillery, and proved to be far more enduring and effective than the bronze rifle Howitzers, bearing the name of Dahlgren. See "Marine Artillery" Pamphlet.

While the work of finishing these semi-steel guns was going on, Capt. Andrew A. Howard, then chief of the Navy Ord-

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which the above extract is taken, was sent with the "plug" to the Ordnance Bureau. On learning this fact while in Washington last summer, I charged this attempt to stab me in the back upon Admiral Dahlgren, to which he replied, in substance, that the matter had been brought up before the President as an illustration of the unreliability of private establishments, and to demonstrate the necessity for having great Government establishments, under the immediate supervision of *trustworthy* and *intelligent* Ordnance officers, like himself, as I inferred, responsible to—whom?

This is not the only instance in which Admiral Dahlgren has shown a similar disposition to place me in a false position, where it would be likely to impair my reputation and injure my business prospects.

* I subsequently received payment for these guns, they having been submitted to a re-inspection and testing, and were found perfect, and are now in service. Before they were delivered to the Navy Yard, I applied to the Bureau for permission to give them to Gen. Burnside, on account of the War Department, who was most anxious to have them, the twelve Howitzers previously furnished him by me, having given such entire satisfaction. This permission was peremptorily refused by the Ordnance Bureau, yet the payment for them was delayed for more than a year after their delivery.

nance Bureau, visited my workshops, and examined the finished work, and that in the process of finishing ; on which occasion he expressed himself in the most unqualified terms of satisfaction and even admiration, for the perfect and even elegant manner in which every part of the guns was finished—*more than once repeating the remark that "he had never seen anything at all equal to it, either in a government or a private Foundery, and that he was fully satisfied with all that I was doing."* This visit was made but a few days before the failure of the last of the 50-pdrs. herein-before mentioned.

I found, in measuring the pattern howitzer made at the Washington Navy Yard, *that it had not the accuracy and workmanship which was demanded of me in the most stringent terms, and with which I strictly complied.* The calibre varied at different points along the bore, and the rifling was simply absurd, especially in a bronze gun, it having a twist of one turn in five feet, or twice as much as will be found to be most effective, even in my semi-steel guns, the metal of which has a hardness and an unyielding endurance, in small sizes, that would enable them in service to outwear a dozen such rifle guns made of bronze. These semi-steel guns can be furnished for about the same price as the bronze guns; or, at all events, I am willing to contract to furnish from 100 to 5,000 semi-steel howitzers, navy pattern, rifle or smooth-bore, for the same price as the bronze guns could be furnished for now.

The *annulling of my contract for Howitzers was an act of outrageous injustice*, and was made without cause, (no gun of that kind having failed) to my very great injury; the more especially as all of these guns were made with the utmost care, and none of them have ever been found defective, though submitted to the severest service, and their manufacture was conducted under my own eye and in workshops under my absolute control.

MY CONTRACT FOR FINISHING LARGE CAST-IRON RIFLED GUNS.

I received an order from the Navy Ordnance Bureau to finish fifty 7½-inch, 150-pdr. guns; seven of the blocks were delivered to me, three of which were entirely finished, and the balance were ordered to be returned unfinished, as the various trials at the West Point Foundery and elsewhere demonstrated these guns to be entirely unreliable. The blocks upon which I commenced work were from the Pittsburg and West Point Founderies, and were of the two qualities, *high* and *low* cast-iron, specially adapted for gun metal, with a tensile strength of from 32,000 to 34,000 lbs. to the square inch.

After much delay, and a very large expenditure for heavy machinery, I was paid the contract price for these seven guns, and the *contract was annulled for no fault of mine.* These numerous failures, to keep faith with me on the part of the Ordnance Bureau, and the acknowledge untrustworthy character of large guns led me to *inquire into the cause of the frequent bursting of guns* and this inquiry resulted in the *discoveries* and the *improvements* to which I have *asked attention in my Memorial.* On the 19th and 25th of July, I submitted two notes involving a proposition, that the Ordnance Bureau should let me have the steel 50-pdr. that had been put to extreme test and two of the 150-pdr. cast-iron guns, on which to try my proposed experiments, as set forth in my pamphlet entitled "Great Guns," page 60. As a part of my proposition, I asked that the actual expenses incurred by the experiments, which I proposed to make exclusively in the interest of the Government should be allowed me by the Bureau, charging nothing for my own services. To this I received the following *liberal* and *patriotic* reply:

BUREAU OF ORDNANCE,
Navy Department, Washington City, *July* 28, 1862.

Sir,—In reply to your notes of the 19th and 25th instants, I have to state that, the 5 and 1-10 inch steel gun made by you, will be placed at your disposal as requested, for the purposes contemplated.

It was never intended, however, to do more than to supply you with the *steel gun* and the *other two guns asked for*; and, therefore, all *other expenses are to be borne by yourself.* I am very respectfully your ob't serv't,

JNO. A. DAHLGREN,
Chief Bureau Ordnance.

This order is still in force, and I shall call for the guns very soon, and make the proposed experiments and demonstrations at my own expense, which would have been done before now, but for the complications forced upon me by the failure of the Ordnance Department to fulfill its contracts with me.

I presented my bill to the Ordnance Bureau sometime since asking payment for the two 50-pdrs., which had been completed, inspected, tested, and delivered at the Brooklyn Navy Yard, *in compliance with the written instructions from the Ordnance Bureau*, and submitted a written statement, setting forth that I had never before presented the bill from the fact that I had always found it impossible to obtain any satisfaction or adjustment from Capt. Harwood, then Chief of the Ordnance Bureau. I also submitted the following sworn statement, which sets forth the circumstances under which I undertook to make 50-pdr. rifle semi-steel guns for the Navy Department.

(COPY.)

City and County of New York:

M. T. Merritt, of No. 74 Broadway, New York, being duly sworn, deposes and says, that he was present at the Bureau of Ordnance for the Navy Department, in the City of Washington, during several interviews for the negotiation, and read the correspondence between Norman Wiard and Com. Andrew A. Harwood, Chief of the Bureau of Ordnance, in reference to the fabrication by said Wiard, of semi-steel 50-pdr. guns for the use of the Navy, which took place in the summer, of the year 1861, and that deponent was so present as the adviser of the said Wiard, and also at the request of Messrs. Tugnot, Dally & Co., who were interested in the manufacture of guns.

And deponent further says, that said Wiard did then and there represent and state to said Com. Harwood, that he could not profitably undertake less than fifty guns.

That the said Chief of Bureau did consent to give an order for that number, but afterward stated that he wished to reserve the privilege to stop the work upon the completion of any gun, to which Mr. Wiard objected, that not less than five guns could be in course of construction at any one time. And that it was finally decided and agreed both by the Chief and Mr. Wiard, that an order should be given for five, and be renewed for the same number as fast as five were completed.

Deponent further says, that doubt was expressed by Com. Harwood, whether such heavy guns could be properly welded, but no doubt as to the quality of the guns if the welding was successful.

When the subject of the charge was referred to, Com. Harwood said distinctly that *the proof was to be ten service charges fired from each gun, and made no mention of risk on one gun from the fault of another, but on the contrary it was acknowledged by Mr. Wiard, that the failure of a greater or less number of the first five or ten guns might occur*

during the test, but no apprehension was expressed by either party as to the safety of those that should pass the examination and test, and that after making five or ten, the process would be so perfected as thereafter to insure uniformly good guns. And that Com. Harwood gave frequent assurances that a large number of the guns would be wanted.

Deponent further says, that *no mention whatever was made, that any gun was to be rejected for the failure of another.* And that neither deponent nor Mr. Wiard, as deponent believes, had any intimation whatever to that effect, and that if such had been the case, or if any intimation had been given to that effect, either by Com. Harwood or the Department, deponent would not have advised the undertaking of such fabrication by Mr. Wiard.

Sworn to before me, this 26th day of Jan., 1863.

M. F. MERRITT.

JOSEPH C. LEIR, *Notary Public.*
[L. S.] New York City.

In reply to my application for payment for those guns, in which I mentioned the circumstance related in the foot-note, page 29, I received the following letter from Capt. Dahlgren, Chief of the Ordnance Bureau:

BUREAU OF ORDNANCE,
Navy Department, Washington City, *Jan.* 26, 1863.

MR. NORMAN WIARD, New York:

Sir,—Your communication of the 20th was received on the 24th, in answer to mine of Jan. 19, wherein I apprised your agent, Mr. Stuart, that I saw no reason to reverse the decision of my predecessor in relation to two semi-steel guns for which you claim payment.

As you appear dissatisfied with my conclusion, *I can only offer you the opportunity of an opinion from the Hon. Secretay of the Navy*, and, supposing that course acceptable to you, will make the reference accordingly.

I have no remembrance of the conversation to which you allude; but if Assist. Secretary Watson has said so, it must be so.

It was of course official—therefore supposed to be confidential—and must have been said in the necessary course of business.

When this took place you do not state; but you will perceive that if I did speak of this part of the transaction, which you yourself characterize as an "outrageous *fraud*," I must naturally have considered it in connection with the contracting party, not knowing at the time that there might be others who were responsible for the act.

On receiving your letter I caused the files to be examined, when a letter of Captain Hitchcock was found, in which the following passage occurs:

"I have no cause to think that Mr. Wiard had any knowledge of this transaction," which I presume is what you allude to.

I am, very respectfully, your obedient servant,

JNO. A. DAHLGREN, *Chief of Bureau.*

On the receipt of this letter I made an application to the Secretary of the Navy in reference to my claim, and he told me

that "*Dahlgren knew all about it, and he would therefore have to refer the matter back to him.*" This occurred on the 14th of February, 1863. Upon this I became satisfied that I had no chance, for a proper settlement of my just claims, short of an appeal to Congress, and in some sort to the country. There is justly due me at this moment the sum of $20,000, for the two guns at the Navy Yard, and the two lying in the workshop yet uninspected, from no fault of mine; and by the referring of the whole matter by the Secretary of the Navy to Admiral Dahlgren it will be seen that it is only to the fairness and justice of his irresponsible decision can I look for relief, and that he has once refused.

In justice to myself and others involved with me, I ask that the two guns now lying at the Navy Yard be paid for, and that the inspection of the two guns in the foundery be completed, and, if found satisfactory, that they be also paid for. All of these guns were made upon the *faith of the contract* from the Ordnance Bureau, and it is a *crying injustice that a private citizen should be so deeply involved, through the bad faith and the unjustifiable acts of oppression on the part of government officers.*

The following article from the *New York Tribune*, will give some idea of the necessity for the passage of the foregoing res olution of inquiry, as it sets forth inconsistencies and incompetency that would disgrace any private individual and ruin any private establishment.

ANNUAL REPORT OF THE CHIEF OF THE NAVAL ORDNANCE BUREAU FOR 1862.

Our ordnance officers very properly commence their reports with a *general* confession of ignorance; they occupy page after page with information of what has *not* been done, giving copious details of costly experiments which have failed, and sum up the total results of their experience in a confession of *particular* ignorance. Such is the character of the report of the Navy Department, rendered by Capt. Dahlgren, Chief of the Ordnance Bureau, at the close of last year. It may be divided into two heads, namely: advice to the Department to do certain things, and a labored endeavor to prove that it is almost impossible to do them; and in this respect it is the counterpart of Rodman's work on Ordnance, one of the most important chapters of which is headed "*What We Do Not Know.*" As a knowledge of our own ignorance is the beginning of wisdom, this should have been the first chapter of the work.

Capt. Dahlgren's report sets forth some curious facts. It states that the Monitor was armed with 11-inch guns, and that in its action with the Merrimac "*shot were used with an initial velocity of* 1,120 *feet per second;*"

but that "*since that time, the same class of gun has been ascertained to be capable of throwing solid shot of 169 lbs., with a charge of 30 lbs., of powder, giving an initial velocity of 1,400 feet per second.*" By this we understand that the capacity of the 11-inch Dahlgren gun has only just been discovered, notwithstanding the vast amount of money, gunpowder, and gun-metal, expended in experiments and trials, but which might have been expended to greater advantage. A similar discovery has been made with regard to the 9-inch Dahlgren gun; but it would seem that we owe these (asserted) discoveries more to accident than to the *intelligent purpose of their designer and patentee.*

Capt. Dahlgren quotes a detailed account of various trials made in England with heavy guns upon iron-plating, showing that guns carrying shot weighing from 156 pounds to 280 pounds, projected by a heavy charge of powder, were capable of penetrating the thickest armor at present considered practicable. From this, he draws the conclusion (about the only one in the report, and that made to his hands by the English press,) that plated ships can not withstand large guns. Then, as if determined to overthrow his second-hand conclusion, he states that, though the Monitor and the Merrimac "sustained for four hours the *utmost efforts* of each others batteries," neither ship was injured! This is a sad overthrow to Capt. D.'s solitary conclusion, and still further strengthens our impression of ignorance, when he, the inventor of the 9 and 11-inch guns, speaks of their "*utmost efforts*" in that action, and acknowledges that he found out, shortly after, that they could be fired with a heavier charge, and thus project the shot with a greater velocity. If he had known this important fact sooner, and if the conclusions drawn from the English experiments are correct, the guns on board the Monitor should have annihilated the Merrimac within half an hour.

Upon reading the English reports, we have arrived at a different conclusion from Capt. Dahlgren's, viz., that the *offense* (ordnance) has the advantage over *defense* (iron-clad ships); for this reason, *that the resistance to the penetration of shot is equal to the square of the thickness of the plate.* That is, if a plate four inches thick will resist a shot moving at the velocity of 1,500 feet per second, a plate eight inches thick will resist a shot of the same weight and diameter, moving at a velocity of 6,000 feet per second; a velocity which can not be attained, while it is very possible that models for ships may be made to accommodate plating of eight inches in thickness. Consequently, as Capt. Dahlgren's famous 9 and 11-inch guns have but recently attained, as their highest velocity, 1,400 feet per second, and that only by doubling the charge beyond what he heretofore considered safe, viz., fifteen pounds, what becomes of his conclusions that ordnance is superior to iron-plating?—or how, in opposition to these facts, can we receive his self-complacent remarks, while eulogizing the power of his *patented* guns, and the immunity they afford against all attacks—"*we have the leisure to consider and devise any other species of ordnance that may be better adapted to the purpose, and are not precipitated into hasty or questionable measures.*" We are compelled to believe that Capt. Dahlgren has been devoted to leisure; as, by his own statement, it has taken

him several years to find out what charges of powder and weight of shot the guns of his own invention would endure and carry.

To what end, then, we would ask, has Capt. D. devoted years to literally paving the eastern branch of the Potomac with thousands of tons of iron shot and shell in his trials and experiments? What are the results of his experience? Thousands of guns burst; millions of money uselessly expended, and our large guns, up to this time, a failure! The Navy Ordnance officers burst the Army guns; the Army Ordnance officers burst the Navy guns; and the struggle seems to be which shall decry the other the loudest; but out of this struggle comes no trustworthy gun—out of official incapacity comes no light upon the subject. If the Chief of the Ordnance Bureau was ignorant of the (now stated) power of the guns by himself invented, *patented*, tested, of course approved, and now *through his position forces upon the Government*, what have we to expect from the Department? We know the inviolability which surrounds the Bureaux; we know that they are sacred from outside intrusion; that talent, enterprise, and genius would feel strange if they should surreptitiously get in there (the only possible way to do so); but we believe that the exigencies of the country demand that routine, for once, should be set aside, and that light from the outside should be let into the mental darkness which misgoverns and misappropriates the ample means placed at the command of those incapable of using them to the advantage of the country.

The following is from the *New York Tribune* of March 10, 1863:

DAHLGREN ONCE MORE.

The inevitable impression left upon the mind after reading Dahlgren's Report, is, that we are the most inefficiently governed people in the world. That our rulers have been hopelessly blind and besotted, without caution and without foresight. At the commencement of the Rebellion we had but few good guns, and were obliged to "*fall back upon artillery which had been discarded from the service.*" Dahlgren acknowledges that our Navy was not at that time "on a footing commensurate with the obvious wants of the country for *ordinary* purposes." A clear acknowledgment that our Navy, even as a peace establishment, was not up to the proper standard. We had scarcely any niter, an article so important in the manufacture of gunpowder that, as Dahlgren says, "It may be said to be gunpowder itself. Almost our entire supply came through England, and its exportation thence was entirely stopped during the Trent excitement." The scarcity of so important an article must have been known to the Department, and yet, although armed rebellion had been stalking through the land for two years, the Ordnance Bureau has "secured, after resorting to all possible means, a stock of niter, domestic and foreign, sufficient to place our Navy beyond the danger of *immediate* necessities." Cold comfort this, with possible serious complications looming up in the immediate future.

The efficiency of our Navy, that arm of public service which has been our particular pride and boast, may be judged of from a fact related by Capt. Dahlgren himself, namely, that out of a detachment of *three hundred able-bodied seamen*, placed by him to defend an important point, it was found that *only ten or fifteen of the men had ever served at a gun before!* Dahlgren naturally suggests that "some course of instruction in gunnery may be *instituted* as a part of the system of the Navy." After a century of national existence as one of the foremost maratime powers of the earth, it is suggested, by a high official that *the handling of guns should be* INSTITUTED *as a part of our Naval system!* Upon what a shallow foundation have we rested the boasted glory, efficiency, and invincibility of our Naval power!

Upon the subject of iron-clads and ordnance, *Admiral* Dahlgren acknowledges the most gratifying ignorance. He does not know whether the armor for ships should be one solid plate or many thinner plates! He does not know how the plates should be fastened to the wood backing! He does not know how to economize the open space of the ports when the gun is out, or to close it when in! He does not know, the number of cannon being reduced to a third of the number he is accustomed to rely upon, how he shall supply the loss of force by the weight and kind of those which remain! He does not know whether he shall use rifle or smooth-bore, breech or muzzle-loaders! He does not know whether it would be better to pierce, or crush and break bolts and strip off the armor, or to attempt to pierce the interior with shells.

This is a formidable account of what our principal ordnance officer does *not* know; and yet, with all these acknowledgments under his own hand, he states, with rare coolness, in a paragraph on a following page, that "*The operations that have been conducted here with reference to the power of different cannon and projectiles, as well as the resistance of iron plating, have been so far satisfactory that the results derived have been consistent.*" Results consistent with what? We look in vain for a single result derived from the experience of Ordnance Officer Dahlgren. We, however, disclaim any emotion of surprise, for we could not reasonably expect a practical result from an officer who, after trying for years guns of his own invention, manufactured under his own supervision, left it to accident to discover that they were capable of bearing double the charge of powder that he considered safe! It should be remembered that to this fatal ignorance may be traced the failure of our arms before Richmond; for had the Monitor destroyed the Merrimac in their first encounter, which she could have done had her guns been charged and shotted to the extent it is now assumed they can bear, the James River would have been free for our gunboats to have coöperated in a victory, instead of arriving just in time to cover a defeat.

We have a reasonable sympathy with ignorance which is unavoidable through adverse circumstances, but we feel justly indignant when a well-salaried officer, educated to his position at the public expense, having at his command unlimited means to solve all doubts by extended and complete experiments, acknowledges in an official document his total want of knowledge on every

point which one in his position ought to know thoroughly. We feel more indignant still when we know that, while conscious of his own incapacity, he persistently refuses to examine the labors of intelligent minds directed to the elucidation of the very points respecting which he emphatically declares that he knows nothing. Routine abhors Progress, and Routine in the Ordnance Office is the rule to which, unfortunately for our country, there is no single exception. Admiral Dahlgren has invented guns, of whose capacities he is entirely unconscious, and has taken out patents for the same in his own name, contrary to all official rule, and with these guns, of unknown qualities, he guards the Ordnance Department from all innovating, *patent-damaging* improvements. Over his official door should be placed, in letters of brass: "*All who enter here leave* PROGRESS *behind!*"

It gives Admiral Dahlgren "pleasure to bear testimony to the promptness with which the private founderies have met the demands on them from the Government." This is a generous acknowledgment of merit, but we receive it with much suspicion. The demands are met undoubtedly; but how? What is the per centage of failures? What is the cost to the Government for the countless experiments to arrive at these failures? The experience of Captain Rodman, Chief of the Army Ordnance Bureau, is totally adverse to the spirit of the above compliment to "private founderies." He says, after frankly enumerating a fearful list of failures, that

"These facts, to my mind, are conclusive as to the fact that we are at present far from possessing a practical knowledge of the properties of cast-iron in its application to gun-foundering; and it is too much to expect of private enterprise to take up and prosecute so intricate and expensive an inquiry."

He further suggests that a series of experiments should be entered upon, at the expense of the Government, *as early as practicable!* For what are the millions of public money expended upon our Ordnance Departments, if not for the purpose of arriving by experiment at the very knowledge which our chiefs confess they do not possess? The Secretary of the Navy did not sustain Dahlgren's compliment to "private enterprise," when he applied to Congress for $30,000,000 to establish vast Government founderies to perform what Dahlgren asserts is so well performed by *seven* private firms. We are loth to attribute motives to others which are only remotely discernible, but we are forced to inquire if there can be any mental connection between the "compliment" and the concluding paragraphs of Dahlgren's report, which are as follows:

"In conclusion, I beg to ask your consideration of the present organization of this Bureau. The nature of its duties are military as well as civil, and the minutest details of a cannon or its management on shipboard, are subjects of its cognizance, as well as the directions for making cannon and all their complicated appliances.

"It is thus necessarily in the closest professional contact with commanders of fleets and of ships, as well as of founders and mechanics."

If further powers were confirmed to this Bureau, the "seven private firms" could hardly fail to find a friend in the officer who so handsomely complimented them.

Resolved, That the Secretary of War be, and he is hereby, requested to report and inform the Senate, what improvements, if any, have been made or proposed and adopted by regular ordnance officers under the auspices of his department since the rebellion commenced, or since the adoption of large rifled guns; in materials for, or methods of construction of, heavy ordnance, rifled or smooth-bore.

What failures have occurred during experiments upon heavy ordnance, and what failures of the same in services, whether of guns furnished under contracts with his department, or obtained from the Navy Department.

What was the weight of powder and shot, the calibre, material and weight of heavy guns that have failed.*

What was the rate in time of firing, what the state of the atmosphere by the thermometer, and what the condition of the weather, fair or rainy, at the time of firing of each gun, so far as observations were taken and reported to his department.†

What number of rifled field guns have been mounted on the standard 6-pdr. field carriage, and what changes have been made, if any, to adapt the 6-pdr. carriage to rifled guns.

How many of the 6-pdr. field carriages, on which have been placed rifled field guns, have been disabled or injured by breaking or bending of their axles; and how many 12-pdr. field carriages, on which rifled guns were mounted, have been disabled or injured in the same manner in service, or during experiments conducted in presence of ordnance officers.

What number of 10-pdr. Parrott rifled guns have been placed on 6-pdr. carriages, and what number of 20-pdr. Parrott guns have been placed on 12-pdr. carriages, and what elevation can be attained with Parrott 10 and 20-pdrs. when mounted on such carriages.

What is the recoil, when fired with service charges of the 3-inch wrought-iron gun, and 10-pdr. Parrott gun on 6-pdr. carriages, and how much the recoil of the 20-pdr. Parrott gun when mounted on the 12-pdr. carriages?

What rifle projectiles have been used in service in these guns, and at whose requisition or recommendation in every case, with the name of the designors or manufacturers, and with what results in each and all cases?

How many rifled guns of the above named sizes have been left on the field of battle, or captured by the enemy, from the disabling of the carriages; and what number of rifled guns have been recovered from battle fields, after having been buried, to hide them from the enemy, in consequence of the breaking down of their carriages from causes other than hostile shots?‡

What number of rifled or smooth-bore muskets have been purchased from foreign countries since the war commenced?§

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* See Wiard's Pamphlet "Great Guns," pp. 14 to 19 inclusive.
† " " " " " 44 to 66 "
‡ " " " "Field Artillery," pp. 20, 21, 22.
§ " " " "Small Arms."

And how many of them would interchange with the Springfield rifled musket?*

How many would interchange with each other in all their parts, and how many of them would interchange with the Springfield musket parts, bayonet, stock, lock and barrel only; and how many would interchange with each other for that number of parts, viz., bayonet, stock, lock and barrel?

How many Springfield muskets have been repaired on the field from parts of other damaged Springfield muskets, and how many Springfield muskets have been returned to the arsenals to receive lost or damaged parts?

Has it been the practice of the inspectors to receive what are called English Enfields, or guns similar in appearance, without the test of firing barrels with powder, and were they so received because of the careful and reliable inspection and stamping of all English made barrels, at official proving-houses established by the British government, at which all English made barrels are proved?

And what exertion has been made by the Ordnance Department to have such a system adopted by the United States Government to facilitate the production of guns of home manufacture?

What number of rifle muskets, Springfield pattern, have been ordered, and how many received from private contractors of the manufacture of the United States?

And how many of United States manufacture have been ordered to be made of uniform appearance with the Enfield rifle, and to interchange to the extent of lock, stock, barrel, and bayonet?

How many have been offered, (if contracts could be made,) of this last class of gun?

How many have been contracted for, and how many delivered, and at what prices, and what is the highest price paid for Enfield rifles (so called), exchange and transportation added?

And how many have been purchased at that price?

How many have been purchased of which the whole cost, with transportation, exchange, and commission, amounted to more than $14, how many above $16, how many more than $18, and how many over $20?

ON U. S. STANDARD GUN CARRIAGES.

(*From the N. Y. Daily Times, Oct.* 30, 1861.)

Over 1,200 new standard carriages have been ordered by Gen. Ripley, a majority of which are stated to be designed for the Parrott guns of different calibres. These carriages are made so as to allow but fourteen degrees of elevation to the standard bronze guns, which are much shorter, lighter and smaller in diameter at the breech than the Parrott guns. The effect of this has been found to be as follows: Not more than eight degrees of elevation can be obtained on the 10-pdr. guns, and not more than from six to eight on the larger guns; it also necessitates a change in the location of the elevating screw on the trail,

* See Wiard's Pamphlet "Small Arms."

while the weight of the gun is very much greater than that of any other field guns of similar calibre and weight of projectile.

With rifled guns and suitable projectiles there is no difficulty in working the extreme theoretic elevation of the gun, thus placing shot and shell with accuracy and effect to the extremest ranges, if the carriage be properly constructed to allow of the requisite degree of mobility and elevation. Thirty-six degrees is the theoretical maximum of elevation fixed for cannon, while the standard mechanical adjustment on all United States field carriages is under 15 degrees, much less than is required for rifled guns properly worked. The tenacity with which army ordnance officers adhere to standard forms is illustrated by the fact, that of the 800 carriages designed for rifled guns of entirely different sizes and forms, all have been constructed on the old unchanged models, specially designed for smooth-bore guns of uniform standards. Another fact has been developed in this direction which is still more singular. Two United States Army Inspectors, for instance, will order carriages; one will direct the constructor to imitate a standard carriage in all its measurements and details exactly to the 200th part of an inch. The other will direct that the constructor shall exactly follow the standard drawings prepared by the Ordnance Department, without the least deviation. Now, upon making a careful examination of some of the standard 6-pdr. carriages, which the standard drawings make exactly 9 6·10 inches between the cheek-pieces or trunnion bearings, the constructor finds that the cheek-pieces are 10 inches apart, together with many other differences. On examining the standard drawings, the constructor will find errors even there, and that, as in the case of the arrangement of the spare pole and the spare wheel drawings for the standard 6-pr. caisson, it will be impossible to follow the standard drawings.

These are facts—and are they not disgraceful facts? And do they not properly lead to the inquiry whether there is not a vast deal of pretensious ignorance hid beneath official uniforms and reticence?

THE BANKS EXPEDITION.

136 East Thirty-third Street, New York,
March 7, 1863.

Peter H. Watson, Esq., *Assist. Sec. of War.*

Sir,—On the 12th day of December last, I procured a discount for $18,000, which enabled me to pay cash for part of the stores I had furnished the Government for the Banks Expedition, and at that time I paid $223 51 interest for the loan at sixty days. Nearly all the supplies I furnished, were from drawings carefully prepared originally by myself, at considerable cost of time and money. These drawings, copies of which I furnished to the War Department, and for which I received no remuneration, were exhibited to Gen. Banks, who approved of them, and ordered the supplies to be got ready, with the condition that they should be completed within two weeks. Twelve

launches had to be made, but on applying to boat-builders, I was assured that it would take six week, at least, to build one launch. But as the order from Gen. Banks was imperative in regard to time, I refused to listen to such conditions, and did succeed by great personal exertion, in having these launches ready in season for the expedition. To achieve this, I had to pay cash down, or in advance, for the best mechanics in this City have no faith in the prompt payment of the Ordnance Department. For myself, I had confidence that Gen. Banks would see me promptly paid, although I had no conversation with him on the subject from want of time, as, in addition to my severe duties of putting stores on board, I had magazines to build on the transports, and articles to manufacture, in almost every branch of mechanical business, and all to be completed in a limited time.

While I was attending personally to putting stores on the steamer North Star, on December 6, I was informed that Gen. Banks would leave on that day. I at once called upon him at head-quarters, to say that my accounts would require to be audited by him before he left. He said if I would be on board the steamer as she moved down the bay he would come on board off the Battery with a tug, which he would detain for my return, and that as we went down he would audit or attend to the accounts. I prepared a copy of my accounts, and remained on board the steamer when she left the dock. Gen. Banks did not come on board, but the small steamer conveying him and some of his friends moved alongside the North Star as we sailed down the bay. When the General did come on board, I met him at the gangway, and reminded him again of my accounts. He directed the small steamer to wait for me, and examined my accounts, with the assistance of Col. Holabird, and wrote

Approved,

N. P. Banks, M. G. C.

I forwarded the accounts, approved by the General, to the Ordnance Department, accompanied by a copy of a letter from him to me, speaking approvingly of my manner of performing my duties, and of my services. These accounts Gen. Ripley refused to pay, and they were returned, for the alleged reason that no receipt of a U. S. officer accompanied the account. This is a mere quibble, as Gen. Ripley should know that Gen. Banks would not approve these bills unless the stores were delivered. He also knows that I have always sacrificed myself for the interest of the Government; and he does know that I was directed by the War Department to take a position under Gen. Banks, in which I must obey his orders. The result is, that I have had to renew my note of $18,500, and again pay $219.97 interest. I have large means and credit involved for the Government, and, after nearly two years' faithful exertion to do it good service, I am left to bear the most oppressive difficulties, without either aid or sympathy; and I am paying interest for a large amount of money on Government account, for which no

allowance will be made to me at any time, even if I should eventually be paid the principal. In a few days my second note will fall due, and I write to ask that you will see that my just claims are settled, and that I am relieved from the oppression arising from the obstacles thrown unnecessarily in the way of my payment by Gen. James W. Ripley.

Respectfully,

NORMAN WIARD.

LETTER OF GENERAL BANKS.

NEW YORK, December 4, 1862.

My Dear Sir,—I desire, at the moment of my departure, to make to you my unqualified acknowledgments for the valuable assistance you have rendered me in fitting out my expedition. Your suggestions have been most important and your services valuable. When I can, you may rely upon my fully reciprocating your favors. As soon as time will permit me I will make known to the Secretary of War my opinion of your efforts. I remain, most truly and sincerely, Your friend, etc.,

N. P. BANKS.

NORMAN WIARD, Esq.

CONTRACTS WITH THE WAR ORDNANCE DEPARTMENT.

The contract system at the War Ordnance Department under General Ripley, is exemplified in the following statement of facts. It would probably be characterized by all honorable men as an instance of gross corruption and favoritism. It, at all events, offers a good and sufficient reason why no honest man can hope for a fair competition in any business with the Department, although the proposals are publicly advertised for competition.

In the month of May, 1862, an advertisement from the Secretary of War, appeared in many papers, for 5,000 tons of lead. In the month of June, the order was modified to 1,666 tons, sealed proposals to be opened on the 5th day of August. Early in July, the firm of Naylor & Co., New York, addressed a letter to the Ordnance Department, offering to contract for lead, and were assured by the Ordnance Department, through Gen. Ripley, that no open proposals could be received, but inviting sealed proposals, to be opened 5th August. About

the 19th July, one of the firm of Naylor & Co., Mr. Huntington, appeared at the Ordnance Department, and remained there several days, until the 25th of July, on which day he made an offer to the War Department for 3,590 tons of lead. It was referred the same day, to Gen. Ripley for report. On the same day a contract was recommended; on the same day a contract was approved, which contract stipulated, that 897 tons were in store, and 2,693 tons were at sea, and to arrive. At that period there was in store belonging to the Government, 2,800 tons, equal to 50 to 55 day's supply. On the 5th day of August, the farce of opening the sealed proposals was supposed to have taken place. The commission on Ordnance and Ordnance stores, in the elaborate decision of the Mason case, No. 71, decided that all contracts for prospective deliverly, should be by public advertisement only, and to be given to the lowest bidder. By this decision, every contract approved by the Hon. Simon Cameron, Secretary of War was declared null and void.

The present case of Naylor & Co., as passed by the Ordnance Department, under Gen. Ripley, *was a deliberate act of malfeasance of office:* 1st. In violating the Act of Congress of March, 1809. 2d. In violating the honor pledged to those who sent in sealed proposals. 3d. A gross favoritism to this firm of Naylor & Co. The act of Gen. Ripley actually nullifies the action of the commission on ordnance and ordnance stores in every case, and deters honorable merchants and manufacturers from presenting sealed proposals, from fear of such violations of public faith. Naylor & Co's. contract was purely prospective, as 2,693 tons were to arrive. The original advertisment for 5,000 tons having been reduced to 1,666 tons, together with the fact that 2,800 was in store belonging to the Government, shows that an exigency did not require such a contract.

I have been informed that Huntington was an old Springfield friend of Gen. Ripley.

When a lot of tenders for small arms were opened, Captain Balsh broke the seals, Captain Benton read the contents, while a clerk recorded. A similar ceremony took place at the time of opening sealed proposals for infantry goods.

But when the proposals for lead was recorded, they were

brought to the clerk on the 6th of August instead of the 5th, the seals already broken! Query.—*Were they opened on the 5th of August or on the 25th of July?*

For a corroboration of these facts, examine the National Intelligencer, Washington, for advertisment for sealed proposals for Lead, May and June 1862. Also—

Call for the letters of Naylor & Co., early in July, with the replies thereto.

Call for the contract passed on the 25th of July, 1862.

Ask what number of sealed proposals were received and opened on the 5th day of August.

Ask for the supply of lead on hand on the 25th of July and what is the rate of consumption.

Another gross deception practiced by the Army Ordnance Bureau under Gen. Ripley, with a view to blind the public to a sense of the utter exclusiveness of that office, may be found in the system of advertising for Proposals for cannon, after the following manner:

ARMY AND NAVY PROPOSALS FOR CANNON.

Proposals will be received by the War and Navy Departments until the 23d day of June, 1862, for the fabrication of the following heavy cannon, viz:

1. XV inch smooth bore—not to exceed 50,000 pounds in weight.

2. XII inch rifle—to be of the same exterior form and proportional weights as the XV inch smooth bore gun. The length of the guns over all, are not to vary essentially from standard guns of same calibre, viz., about 16 feet.

3. The ship guns to be constructed with a preponderance one-sixteenth of the weight of the piece, and to have a cascable for an elevating screw.

4. The fortress guns to have ratchets for elevating, but to be without preponderence, as is the case of the new pattern Columbiads.

5. The first gun of each kind to stand a proof of one thousand rounds with a charge of powder of *one-fourth* the weight of the shot for the XV inch, and *one-fifth* for the XII inch. The shot for the XV inch gun to be not less than 450 pounds in weight, and to have an initial velocity not less than 1,500 feet; and for the XII inch rifle not less than 500 pounds, with an initial velocity not less than 1,300 feet.

Should the trial guns pass the prescribed proof and inspection, each branch of the service will contract for twenty of each kind, to be made precisely like the trial gun in every respect; provided, that each gun stands a proof of one hundred rounds with service charges.

7. Should the trial guns stand the required proof, the Government will pay

the expenses attending the proof, and for the guns. Should they fail to do so, the costs, with the exception of the powder, will fall on the contractor.

8. The price of each gun is to be stated, and the proposals are to be accompanied by sketches showing the form, dimensions, and calculated weight of the guns, and likewise the material proposed to be used in their construction.

9. The time of completion for inspection of the trial guns is not to exceed ninety days, and the limit for the completion of the remainder to be within nine months.

10. The Government reserves the right to reject any or all the proposals if not satisfactory.

11. Proposals should be addressed to the "Navy Department," and be indorsed "Proposals for Heavy Guns."

EDWIN M. STANTON,
Secretary of War.
GIDEON WELLES,
Secretary of the Navy.

We will pass over paragraphs from 1 to 4. The fifth paragraph exhibits the cloven-hoof, as follows: The 15-inch gun is to carry a shot not less than 450 lbs. in weight, and is to stand 1,000 rounds with a charge one-fourth the weight of the shot, or 112 and a half pounds of powder. The 12-inch rifle gun, is to carry a shot weighing 500 lbs. and to stand 1,000 rounds with a charge one-fifth the weight of the shot, or 100 lbs., the initial velocity being respectively 1,500 and 1,300 feet! The Ordnance Department and Bureau knew, when that advertisement was put forth, that no gun ever made in this country or elsewhere, could stand the proof required. When it is remembered that the great 11-inch Dahlgren gun, *was only capable of sustaining a charge of* 15 *lbs. of powder*, although it has *recently been discovered*, so the inventor Dahlgren says, that it can now *stand a charge of* "30 *lbs. of powder*" *for a few rounds*, it will be understood that the Department could not expect to receive an outside proposal; they require outside contractors to furnish guns which will respectively endure 1,000 rounds of 112½ and 100 lbs. of powder, (*the regular service charge of the* 15*-inch guns being only* 40 *lbs. of slow burning powder*) and if they fail under this outrageous test, all the expenses, except the powder, are to fall upon the contractor. Advertisements asking for tenders for ordnance are, therefore, bare-faced shams or worse, and the only party deceived by them is the public.

The efficiency of our Navy, that arm of public service which has been our particular pride and boast, may be judged of from a fact related by Capt. Dahlgren himself, namely, that out of a detachment of *three hundred able-bodied seamen*, placed by him to defend an important point, it was found that *only ten or fifteen of the men had ever served at a gun before!* Dahlgren naturally suggests that "some course of instruction in gunnery may be *instituted* as a part of the system of the Navy." After a century of national existence as one of the foremost maratime powers of the earth, it is suggested, by a high official that *the handling of guns should be* INSTITUTED *as a part of our Naval system!* Upon what a shallow foundation have we rested the boasted glory, efficiency, and invincibility of our Naval power!

Upon the subject of iron-clads and ordnance, *Admiral* Dahlgren acknowledges the most gratifying ignorance. He does not know whether the armor for ships should be one solid plate or many thinner plates! He does not know how the plates should be fastened to the wood backing! He does not know how to economize the open space of the ports when the gun is out, or to close it when in! He does not know, the number of cannon being reduced to a third of the number he is accustomed to rely upon, how he shall supply the loss of force by the weight and kind of those which remain! He does not know whether he shall use rifle or smooth-bore, breech or muzzle-loaders! He does not know whether it would be better to pierce, or crush and break bolts and strip off the armor, or to attempt to pierce the interior with shells.

This is a formidable account of what our principal ordnance officer does *not* know; and yet, with all these acknowledgments under his own hand, he states, with rare coolness, in a paragraph on a following page, that "*The operations that have been conducted here with reference to the power of different cannon and projectiles, as well as the resistance of iron plating, have been so far satisfactory that the results derived have been consistent.*" Results consistent with what? We look in vain for a single result derived from the experience of Ordnance Officer Dahlgren. We, however, disclaim any emotion of surprise, for we could not reasonably expect a practical result from an officer who, after trying for years guns of his own invention, manufactured under his own supervision, left it to accident to discover that they were capable of bearing double the charge of powder that he considered safe! It should be remembered that to this fatal ignorance may be traced the failure of our arms before Richmond; for had the Monitor destroyed the Merrimac in their first encounter, which she could have done had her guns been charged and shotted to the extent it is now assumed they can bear, the James River would have been free for our gunboats to have coöperated in a victory, instead of arriving just in time to cover a defeat.

We have a reasonable sympathy with ignorance which is unavoidable through adverse circumstances, but we feel justly indignant when a well-salaried officer, educated to his position at the public expense, having at his command unlimited means to solve all doubts by extended and complete experiments, acknowledges in an official document his total want of knowledge on every

point which one in his position ought to know thoroughly. We feel more indignant still when we know that, while conscious of his own incapacity, he persistently refuses to examine the labors of intelligent minds directed to the elucidation of the very points respecting which he emphatically declares that he knows nothing. Routine abhors Progress, and Routine in the Ordnance Office is the rule to which, unfortunately for our country, there is no single exception. Admiral Dahlgren has invented guns, of whose capacities he is entirely unconscious, and has taken out patents for the same in his own name, contrary to all official rule, and with these guns, of unknown qualities, he guards the Ordnance Department from all innovating, *patent-damaging* improvements. Over his official door should be placed, in letters of brass: "*All who enter here leave* PROGRESS *behind!*"

It gives Admiral Dahlgren "pleasure to bear testimony to the promptness with which the private founderies have met the demands on them from the Government." This is a generous acknowledgment of merit, but we receive it with much suspicion. The demands are met undoubtedly; but how? What is the per centage of failures? What is the cost to the Government for the countless experiments to arrive at these failures? The experience of Captain Rodman, Chief of the Army Ordnance Bureau, is totally adverse to the spirit of the above compliment to "private founderies." He says, after frankly enumerating a fearful list of failures, that

"These facts, to my mind, are conclusive as to the fact that we are at present far from possessing a practical knowledge of the properties of cast-iron in its application to gun-foundering; and it is too much to expect of private enterprise to take up and prosecute so intricate and expensive an inquiry."

He further suggests that a series of experiments should be entered upon, at the expense of the Government, *as early as practicable!* For what are the millions of public money expended upon our Ordnance Departments, if not for the purpose of arriving by experiment at the very knowledge which our chiefs confess they do not possess? The Secretary of the Navy did not sustain Dahlgren's compliment to "private enterprise," when he applied to Congress for $30,000,000 to establish vast Government founderies to perform what Dahlgren asserts is so well performed by *seven* private firms. We are loth to attribute motives to others which are only remotely discernible, but we are forced to inquire if there can be any mental connection between the "compliment" and the concluding paragraphs of Dahlgren's report, which are as follows:

"In conclusion, I beg to ask your consideration of the present organization of this Bureau. The nature of its duties are military as well as civil, and the minutest details of a cannon or its management on shipboard, are subjects of its coghizance, as well as the directions for making cannon and all their complicated appliances.

"It is thus necessarily in the closest professional contact with commanders of fleets and of ships, as well as of founders and mechanics."

If further powers were confirmed to this Bureau, the "seven private firms" could hardly fail to find a friend in the officer who so handsomely complimented them.

Resolved, That the Secretary of War be, and he is hereby, requested to report and inform the Senate, what improvements, if any, have been made or proposed and adopted by regular ordnance officers under the auspices of his department since the rebellion commenced, or since the adoption of large rifled guns; in materials for, or methods of construction of, heavy ordnance, rifled or smooth-bore.

What failures have occurred during experiments upon heavy ordnance, and what failures of the same in services, whether of guns furnished under contracts with his department, or obtained from the Navy Department.

What was the weight of powder and shot, the calibre, material and weight of heavy guns that have failed.*

What was the rate in time of firing, what the state of the atmosphere by the thermometer, and what the condition of the weather, fair or rainy, at the time of firing of each gun, so far as observations were taken and reported to his department.†

What number of rifled field guns have been mounted on the standard 6-pdr. field carriage, and what changes have been made, if any, to adapt the 6-pdr. carriage to rifled guns.

How many of the 6-pdr. field carriages, on which have been placed rifled field guns, have been disabled or injured by breaking or bending of their axles; and how many 12-pdr. field carriages, on which rifled guns were mounted, have been disabled or injured in the same manner in service, or during experiments conducted in presence of ordnance officers.

What number of 10-pdr. Parrott rifled guns have been placed on 6-pdr. carriages, and what number of 20-pdr. Parrott guns have been placed on 12-pdr. carriages, and what elevation can be attained with Parrott 10 and 20-pdrs. when mounted on such carriages.

What is the recoil, when fired with service charges of the 3-inch wrought-iron gun, and 10-pdr. Parrott gun on 6-pdr. carriages, and how much the recoil of the 20-pdr. Parrott gun when mounted on the 12-pdr. carriages?

What rifle projectiles have been used in service in these guns, and at whose requisition or recommendation in every case, with the name of the designors or manufacturers, and with what results in each and all cases?

How many rifled guns of the above named sizes have been left on the field of battle, or captured by the enemy, from the disabling of the carriages; and what number of rifled guns have been recovered from battle fields, after having been buried, to hide them from the enemy, in consequence of the breaking down of their carriages from causes other than hostile shots?‡

What number of rifled or smooth-bore muskets have been purchased from foreign countries since the war commenced?§

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* See Wiard's Pamphlet "Great Guns," pp. 14 to 19 inclusive.
† " " " " " 44 to 66 "
‡ " " " "Field Artillery," pp. 20, 21, 22.
§ " " " "Small Arms."

And how many of them would interchange with the Springfield rifled musket ?*

How many would interchange with each other in all their parts, and how many of them would interchange with the Springfield musket parts, bayonet, stock, lock and barrel only; and how many would interchange with each other for that number of parts, viz., bayonet, stock, lock and barrel ?

How many Springfield muskets have been repaired on the field from parts of other damaged Springfield muskets, and how many Springfield muskets have been returned to the arsenals to receive lost or damaged parts ?

Has it been the practice of the inspectors to receive what are called English Enfields, or guns similar in appearance, without the test of firing barrels with powder, and were they so received because of the careful and reliable inspection and stamping of all English made barrels, at official proving-houses established by the British government, at which all English made barrels are proved ?

And what exertion has been made by the Ordnance Department to have such a system adopted by the United States Government to facilitate the production of guns of home manufacture ?

What number of rifle muskets, Springfield pattern, have been ordered, and how many received from private contractors of the manufacture of the United States ?

And how many of United States manufacture have been ordered to be made of uniform appearance with the Enfield rifle, and to interchange to the extent of lock, stock, barrel, and bayonet ?

How many have been offered, (if contracts could be made,) of this last class of gun ?

How many have been contracted for, and how many delivered, and at what prices, and what is the highest price paid for Enfield rifles (so called), exchange and transportation added ?

And how many have been purchased at that price ?

How many have been purchased of which the whole cost, with transportation, exchange, and commission, amounted to more than $14, how many above $16, how many more than $18, and how many over $20 ?

ON U. S. STANDARD GUN CARRIAGES.

(*From the N. Y. Daily Times, Oct.* 30, 1861.)

Over 1,200 new standard carriages have been ordered by Gen. Ripley, a majority of which are stated to be designed for the Parrott guns of different calibres. These carriages are made so as to allow but fourteen degrees of elevation to the standard bronze guns, which are much shorter, lighter and smaller in diameter at the breech than the Parrott guns. The effect of this has been found to be as follows: Not more than eight degrees of elevation can be obtained on the 10-pdr. guns, and not more than from six to eight on the larger guns; it also necessitates a change in the location of the elevating screw on the trail,

* See Wiard's Pamphlet "Small Arms."

to remain if Gen. Ripley can keep them there, which he certainly will do if he can succeed in keeping himself in his present position.

See letters of commendation from Gen. Sigel and other officers in my pamphlet entitled " Field Artillery."

THE FREMONT CONTRACT.

I had a contract made in August by telegraph, with Gen. Fremont, for two batteries, one of 12-pdr. Rifled Field Guns and one precisely like the Sickles' Batteries, with two 12-pdr. and four 6-pdr. rifles. At the request of Gen. Fremont, I sent two guns to St. Louis, at the cost of several hundred dollars, with a special representative to have confirmed in a proper manner the contract made directly with him, and to receive his full instructions as I found it *undesirable to deal with the agent* who first opened the subject to me for Gen. Fremont. This contract was subsequently interfered with by Gen. Ripley, and annulled in spite of the earnestly expressed wish of Gen. Fremont to have the batteries. The contract was made with Capt. Callender, Chief of Ordnance to the Army of the West and Supt. of the St. Louis Arsenal, on the direct order of Gen. Fremont, who remarked, " that the guns would be invaluable to him then on the eve of his brief active campaign," (September 26, 1861.)

A copy of the contract was forwared by Capt. Callender to Gen. Ripley, who at once induced the War Department to interfere with its execution. Soon after I sent all of my original telegraphic despatches and papers received from Gen. Fremont and my replies thereto, to Asst. Sec. Scott, and he had them registered as received by him on the 14th of Oct. 1861, in the Record Department, of the War Office, where the record can be seen. I informed him they were only submitted for inspection and to be again returned to me. He sent them to Gen. Ripley. These papers were mine and only sent for examination to confirm the facts in the case, as Gen. Ripley had at the time a copy of the contract from Capt. Callender. They were my only means of showing the terms of my contract and all the condi-

tions thereof, with the personal directions of Gen. Fremont, which led me to incur the expense and trouble of sending two guns to St. Louis, with a special representative. The price of these batteries was to be the same as that of the Sickles, Burnside and Ohio Batteries. I have since repeatedly made demands for the return of these original papers of mine, and as a result have been told by Gen. Ripley, that they *could not be obtained*, except on a call of Congress or an order of the Secretary of War. Being somewhat surprised at this, I made some inquiries into the character of Gen. Ripley's method of doing the business of his office, and have since, in consequence of results obtained and on the advice of others who had a similar experience to mine, have concluded not to place any more original papers relating to business affairs in the hand of Gen. Ripley, without first taking certified copies of the same. My loss in this transaction was considerable, a statement of which prepared as full as possible, without the original papers, has been forwarded to the Secretary of War. The only original paper I have connected with this transaction, being the following letter:

ST LOUIS ARSENAL,
Nov. 21, 1861.

MR. NORMAN WIARD, 136 East 33d St. New York.

Sir,—I received, last evening, a letter from the Ordnance Office, of which the following is an extract:

"*Sir*,—I have to acknowledge the receipt of your letter of the 10th inst. and to state in reply that this Department can not, under the law, recognize the contracts which you have made by the orders of Gen. Fremont."

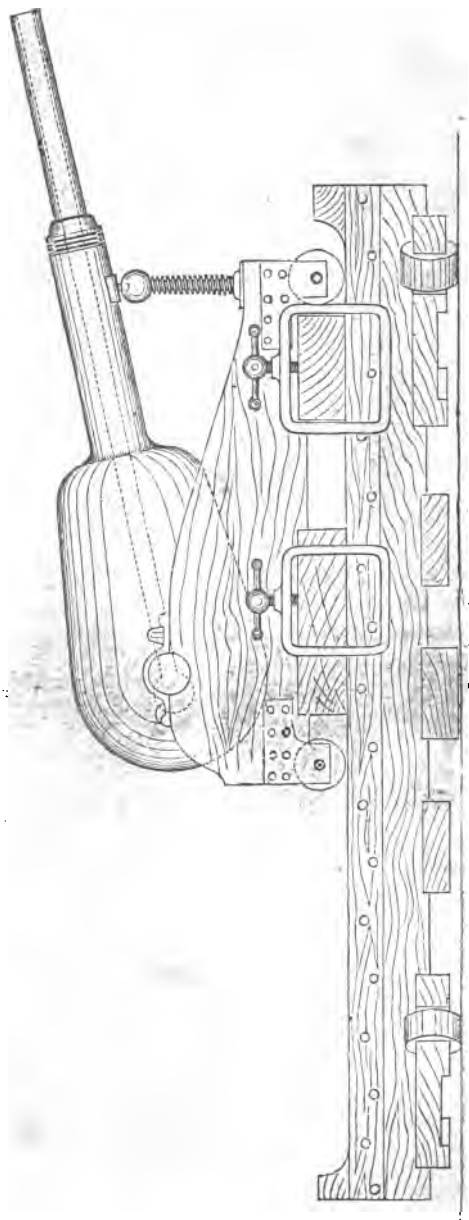
I am not aware whether you have taken any measures to carry out the order which I gave you on the 23d of September last, (1861) by order of Gen. Fremont, but if you have, I give you the information I have received, at the earliest moment in my power, so as to give you the opportunity, should you think proper to do so, to present your claims before the Commissioner now in session in this city. Respectfully your obedient servant,

F. D. CALLENDER, *Capt. of Ordnance.*

By referring to the file of papers connected with the two last batteries made for the Excelsior Brigade, it will be seen that the Secretary of War, several times, ordered the settlement of the account, and Gen. Ripley as often referred it back for further consideration; and at the time an extreme proof of

one of my guns belonging to these batteries was ordered, in which it was to be fired five hundred rounds, at a cost to the Government of more than one thousand dollars, there was in the Arsenal six guns of the 12th Ohio battery that had been fired more than that number of rounds in service, which fact I communicated to Gen. Ripley, but it did not have the effect to deter him from this waste of public money.

NORMAN WIARD.



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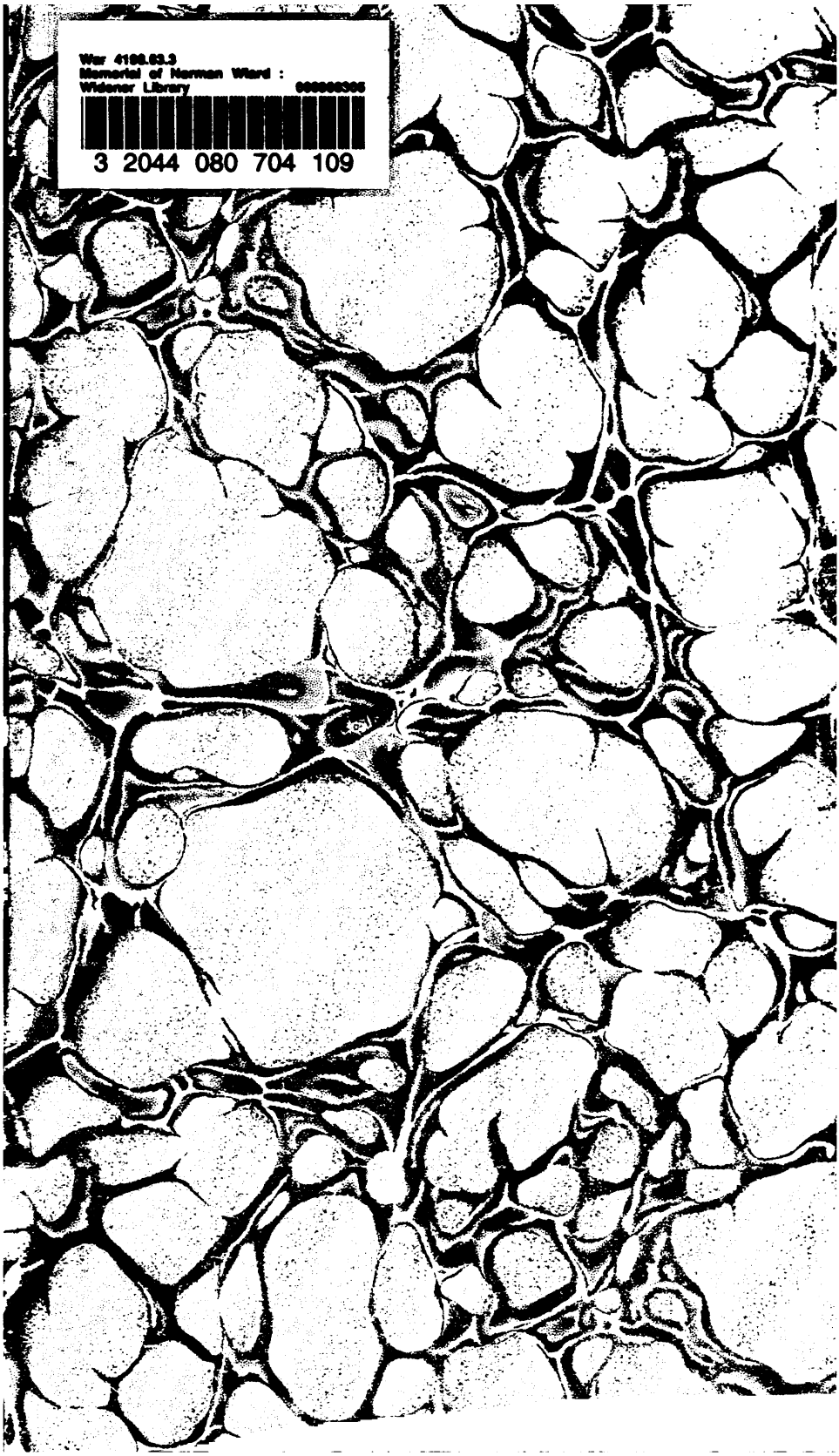
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